MATSING®

LENS TECHNOLOGY ENABLED

MS-6F45 SLP & Tilt Guide

(Stadium Laser Pointer & Tilt Adjustment)

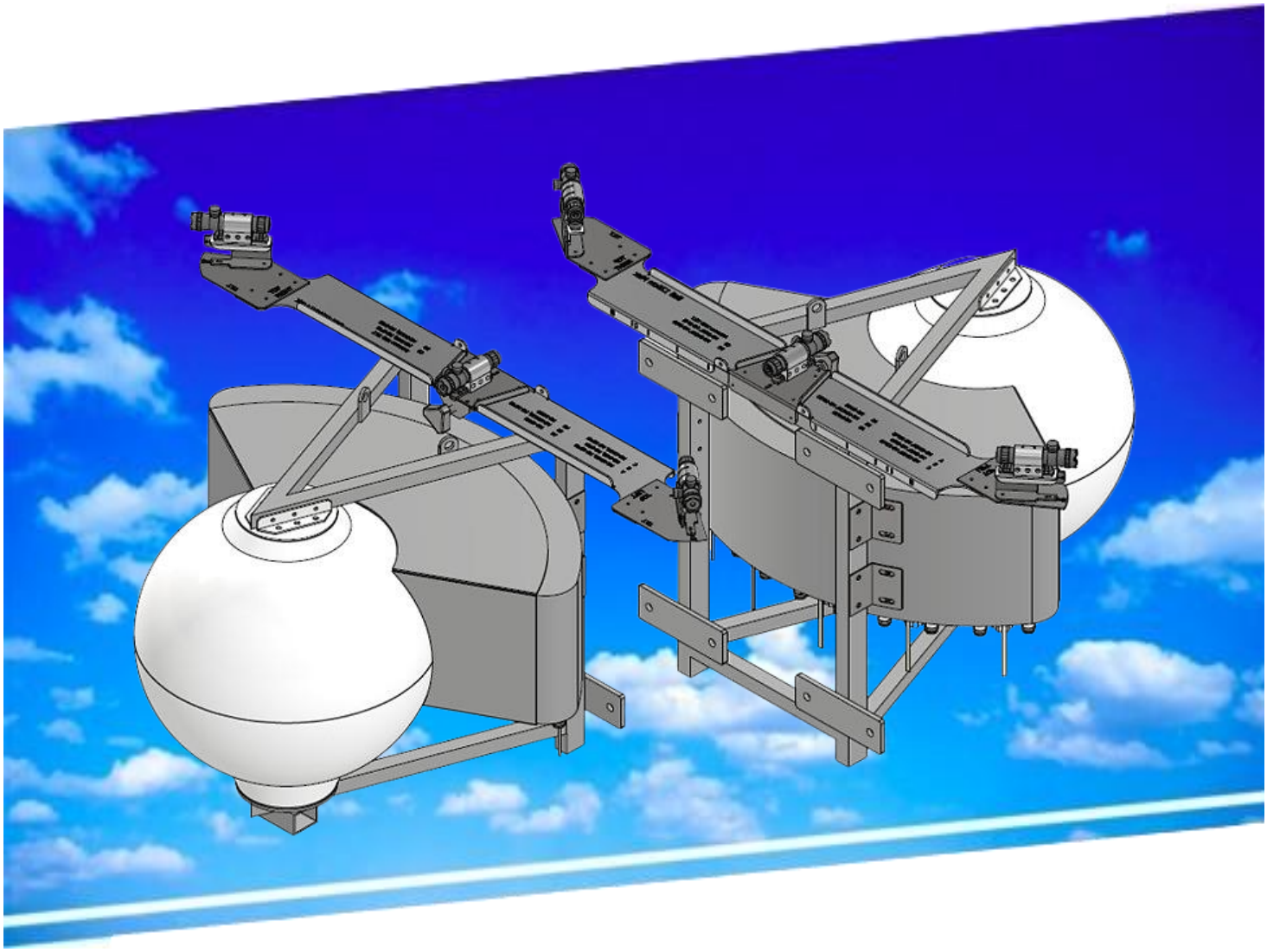

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Table of Contents

Reference Documents

- MS-LSA-SLP-2 User Guide
- MS-LSA Installation & Alignment General Guide
- MS-LSA Antenna Tilt Adjustment & RET General Guide

Revision History

Rev No	Date	Description	Prepare by	Checked by
0	19-Jun-2025	Initial Release	RL	Pavel
1	03-Oct-2025	Add tilt adjustment guide	RL	Pavel
2	02-Jan-2026	Add Europe Laser Fitting Guide	RL	Pavel

1. Safety Instructions

⚠ **Work-at-Height:** Only certified personnel with proper fall-protection may install and adjust the SLP.
⚠ **Laser Safety**: Never aim lasers at people, surfaces, or aircraft. Follow national laser safety laws.
⚠ **Environmental**: Device is rain resistant but not waterproof. Remove batteries if exposed to water.
⚠ **General**: Inspect tools and equipment before lifting/assembly.

2. Applicable Antenna Models

Designed for MatSing **MS-6F45**

3. SLP Parts selection (From MS-SLP-2)

- **Main Base Plate (Ball 120cm Max)**: Anchors SLP to antenna frame. (Figure 1.)
- **Pre-setting Plates (Left & Right)**: Adjust to position 'C' for side lasers. (Figure 2.1.)
- **TILT Plate (for tilting left/right)**: Attaches to base for structural alignment. (Figure 2.2.)
- **Top Tilting Bracket (For tilting up/down):** Fixed tilt angle 0°. (Figure 2.3.)

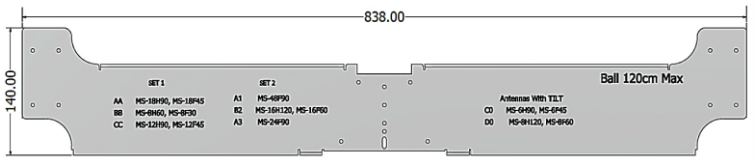

Figure 1: Main Base Plate

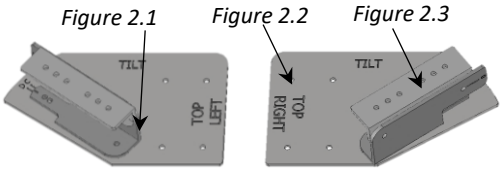

Figure 2: Pre-Set Plate

4. Laser Pointer (For USA)

- **3 sets of Laser pointer/rails. (Left/Right/Centre)**
- **"PINTY" Laser sight:** Laser alignment. (Figure 3.)
- **"Picatinny" Rail:** As laser bed. (Figure 4.)

Figure 3: Laser Sight

Figure 4: Rail

5. USA Laser Assembly Instructions *(Figure 5.)*

Step 1: Attach tilt plate to main base plate.
Step 2: Mount laser beds (left, center, right).
Step 3: Insert and lock laser pointers.
Step 4: Adjust pre-setting plates to position 'C'.
Step 5: Check top tilting bracket at 0°.
Step 6: Mark the frame width position on the rear latch.

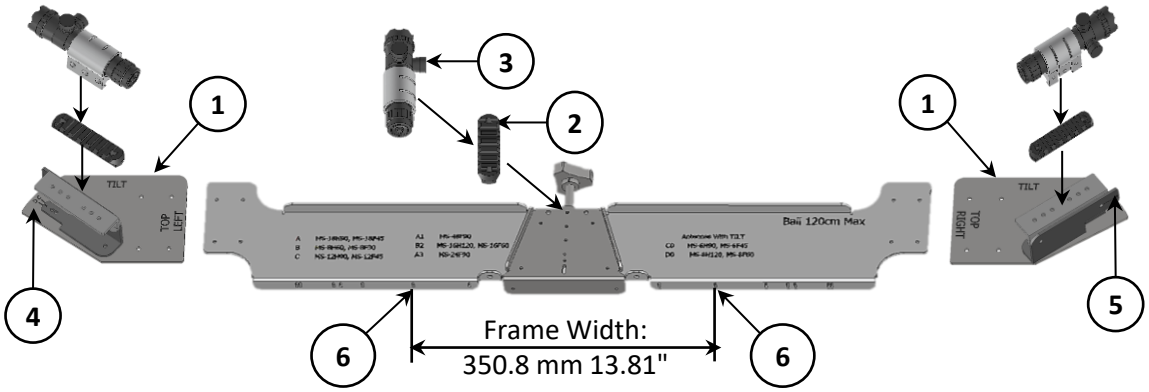

Figure 5: SLP Assembly

6. Laser Pointer (For EUROPE)

- **3 sets of Laser pointer/clamps. (Left/Right/Centre)**
- **Laser Class 2 (≤ 1 mW)** EN 60825-1 compliant.: Laser alignment. (Figure 6.)
- **SLP HOLDER CLAMP:** As laser holder, 15mm for 11-15mm Laser. (Figure 7.)
- **SLP HOLDER CLAMP:** As laser holder, 22mm for 16-20mm Laser. (Figure 8.)

Figure 6: Laser

Figure 8: 22mm Holder

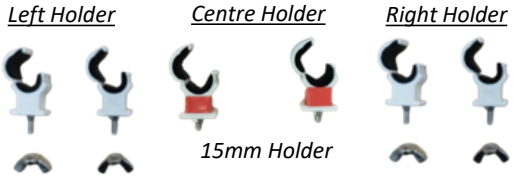

Figure 7: 15mm Holder

***NOTE**: EU Laser size can be from Ø13 to Ø20mm in diameter. Primary use 15mm holder for Ø13mm, if is Ø20mm, Use 22mm holder*

7. EU Laser Assembly Instructions *(Figure 9.)*

Step 1: Attach tilt plate to main base plate.
Step 2a: Direct screw on center holder clamp
Step 2b: Insert holder clamp lock with wing nut. (L/R)
Step 3a: Place laser pointers inside holder and clamp it.
Step 4: Adjust pre-setting plates to position 'C'.
Step 5: Check top tilting bracket at 0°.
Step 6: Mark the frame width position on the rear latch.

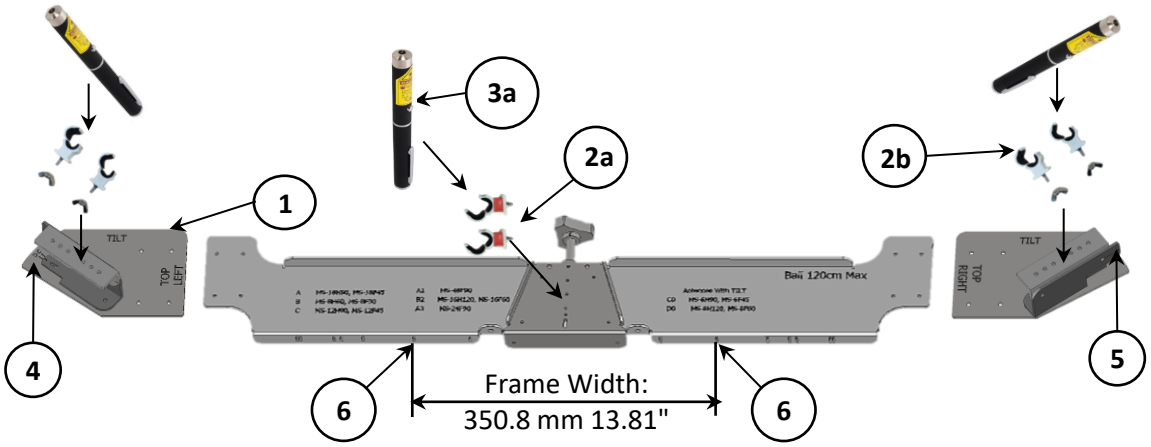

Figure 9: EU SLP Assembly

8. Example of EU Laser Assembled Picture

- **Left and Right Laser Sample of Top 20mm Laser, Bottom 13mm Laser.** (Figure 10.)
- **Centre Laser Sample of Top 13mm Laser.** (Figure 11.)

Figure 10: Left/Right Sample

Figure 11: Centre Sample

9. Lifting & Mounting

- **Pre-check bolts and lasers before hoisting.**
- **Lift with proper rigging; secure with tag lines.**

Step 7: Mount base plate flat on top of frame, align with edge marker. (Figure 12.)
Step 8: Ensure seated flat, tighten the clamps and secure firmly. (Figure 13.)

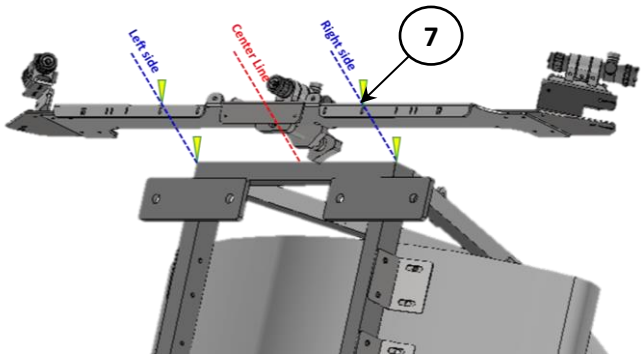

Figure 12: SLP Mounting

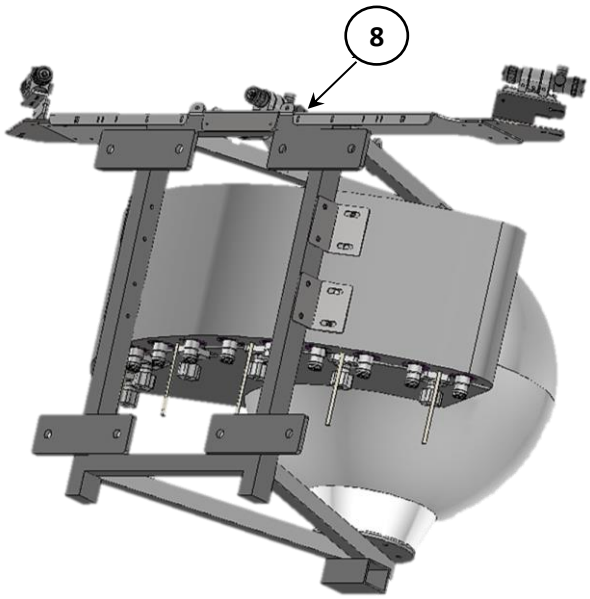

Figure 13: SLP Tightiening

10. Antenna Mechanical Information

Laser	Laser Pointing & Positioning									Beams Tilt Angle	
Top laser	Beam	Left	Up	Beam	Center	Up	Beam	Right	Up	Row 1	
	B1	-50.0°	0°	B3/4	0°	0°	B6	+50.0°	0°	B1-B6	0° to –15°

Figure 14: Antenna Mechanical Parameter

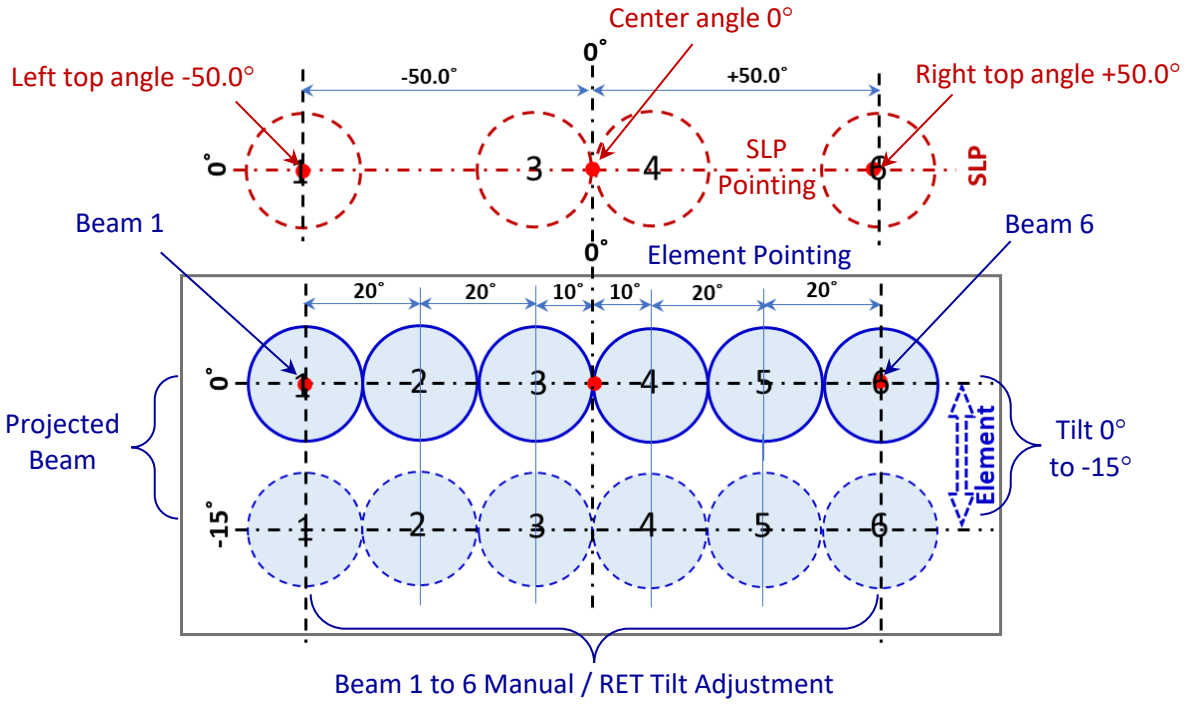

Figure 15: Beam Projected View

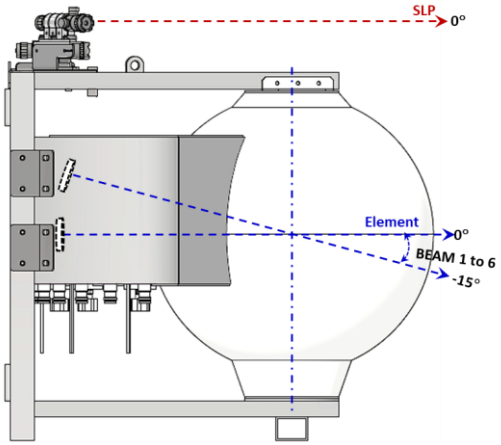

Figure 17: Side View

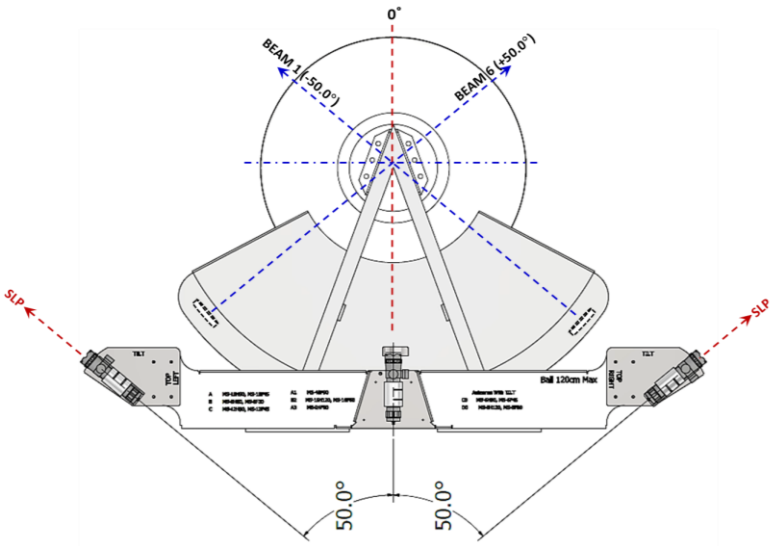

Figure 18: Plan View

11. Alignment & Positioning

Step 9: Activate all 3 lasers.

Step 10: Verify center, left, and right beam locations.

Step 11: Loosen the antenna bracket.

Step 12: Mechanically tilt and adjust the antenna to the target area.

Step 13: Once target confirmed, secure the bracket and mark the position as reference.

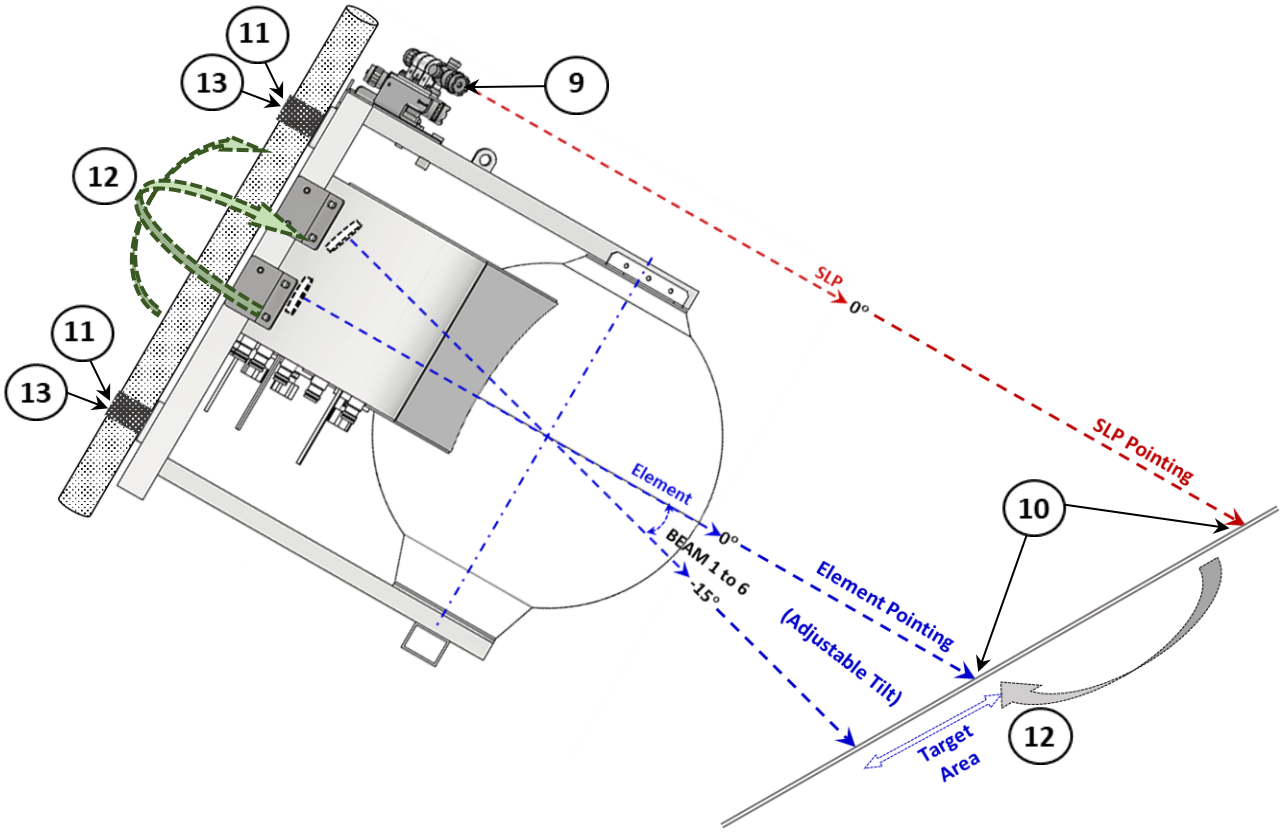

Figure 19: Antenna Tilting & Positioning

12. Manual Tilt Adjustment

Step 14: Loosen the shaft stopper (2 × M3 screws) with a screwdriver.
Step 15: Adjust tilt by hand or with the screwdriver turning the shaft handle.
Step 16: Tighten the shaft stopper screws (2 × M3).

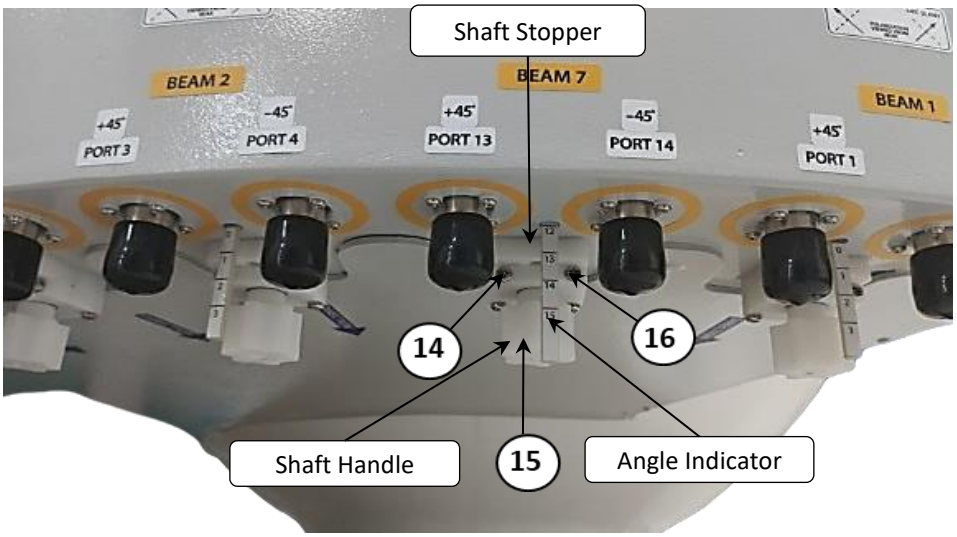

Figure 20: Manual Tilt Adjustment

13. RET Tilt Adjustment

Step 17: Connect RET control cable to Amphenol AISG laptop application.
Step 18: Send tilt command from controller.
Step 19: Verify tilt angle on RET indicator display or laptop application.
Step 20: Confirm beam tilt angle as per planned target.

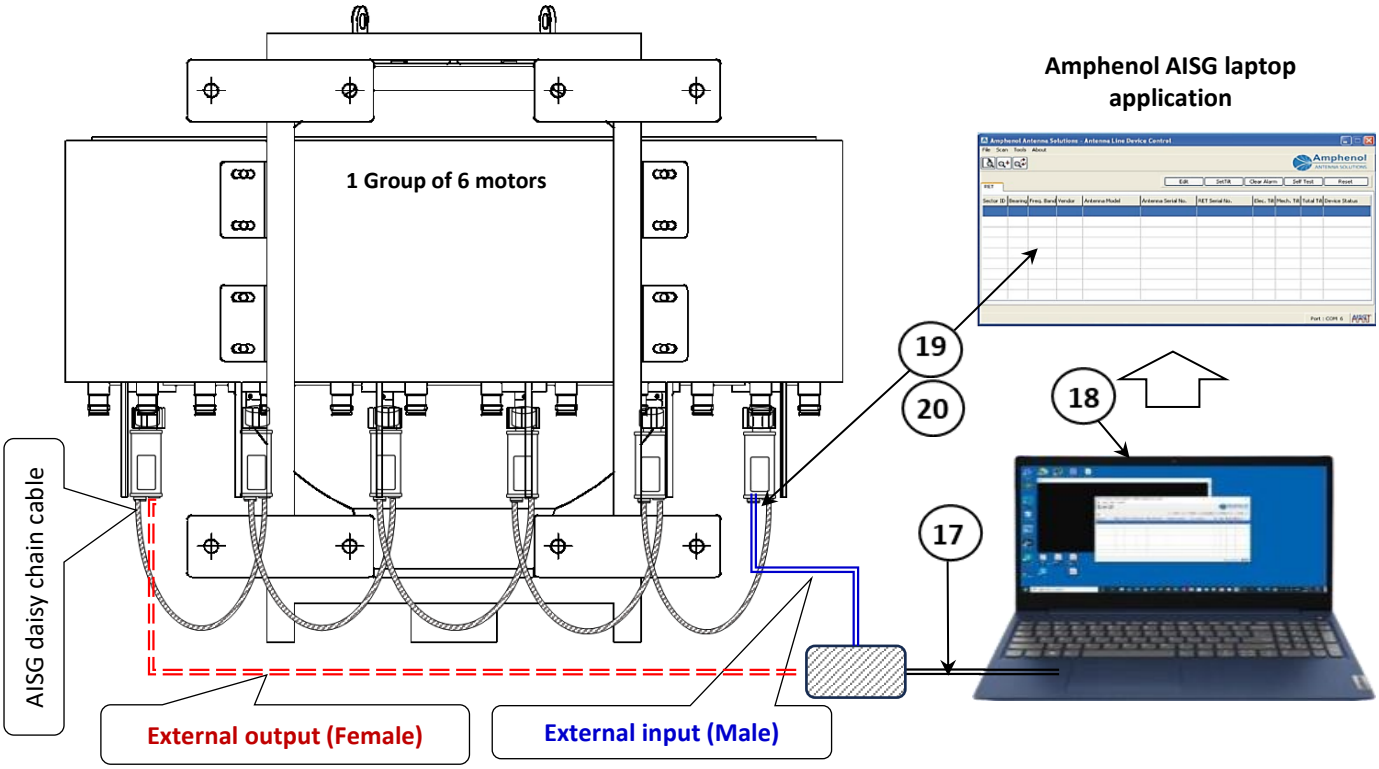

Figure 21: RET Tilt Adjustment